

REMARKS

Summary of Office Action

Claims 1-61 were pending in the above-identified patent application.

The Examiner required restriction of the application to the invention of claims 1-59 or the invention of claims 60 and 61, withdrew claims 60 and 61 from consideration based on a telephonic election, and required affirmation of the telephonic election. Claims 1-59 were rejected under 35 U.S.C. § 101 as being directed to nonstatutory subject matter. The specification was objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an enabling disclosure and claims 48, 52 and 56 were rejected on that basis. Claims 1, 22 and 35 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention.

Summary of Applicant's Reply

Applicant notes with appreciation the withdrawal of the previous rejection and the previous restriction requirement.

Applicant affirms the telephonic election of claims 1-59. Applicant has amended claims 1, 4-6, 8-10, 18, 22, 25-27, 34, 35, 38-40, 47, 48, 52 and 56, and has added new claims 62-73, in order to more particularly define the invention. The Examiner's objection and rejections are respectfully traversed.

The Restriction Requirement and
Affirmation of the Telephonic Election

The Examiner found that there allegedly are two separate inventions in the above-identified patent

application, and required restriction of the application to one of those inventions, as follows:

Group I: Claims 1-58, directed to acquiring and analyzing data based on Brownian motion; and
Group II: Claims 60 and 61, directed to distributed computing using subscribers.

A telephonic election of Group I was made, and as a result claims 60 and 61 were withdrawn from consideration as being directed to a nonelected invention. However, the Examiner required affirmation of the telephonic election. Applicant hereby affirms the election, without traverse, of the invention of Group I (claims 1-58, along with new claims 62-73). Applicant expressly reserves the right to pursue the invention of Group II in one or more divisional applications.

Applicant's Reply to the Objection
And Rejection Under 35 U.S.C. § 112, ¶ 1

The specification has been objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an enabling disclosure and claims 48, 52 and 56 have been rejected on that basis. That objection and rejection are respectfully traversed.

Claims 48, 52 and 56 define a method (or corresponding apparatus) including acquiring said data during a first duration that begins at an initial moment, and determining a first range of said data between a minimum value during said first duration and a maximum value during that first duration, and then determining a second range, expected based on Brownian motion, of said data during a second duration beginning at the same initial moment.

The Examiner has stated that "there is enablement for applying Brownian Motion to a set of measured data points," but that "the specification does not provide enablement for determining, based on Brownian Motion, an

expected second range of data during a second duration beginning at an initial moment." Applicant respectfully disagrees. Indeed, applicant believes that the allegedly missing teaching may be found throughout the specification.

First, in Paragraph [0008], and particularly, at page 3, lines 1-14, the specification explains how, just as a particle that covers an area of radius r in a time Δt as a result of Brownian motion is expected to cover an area of radius $2r$ in a time $4\Delta t$, so too should a price that varies by Δp during an interval Δt vary by $2\Delta p$ in the ensuing $3\Delta t$ -- i.e., in the total period beginning at the same initial moment as the first period Δt and extending $4\Delta t$. In other words, the expected range during the second interval bears to the range during the first interval the square-root-of-time relationship dictated by Brownian motion. That is a clear teaching of how to determine, "a second range, expected based on Brownian Motion, of data during a second duration beginning at an initial moment."

Such teachings continue throughout the specification. For example, in the same paragraph, at page 3, line 30 through page 4, line 2, the specification teaches that periods of lengths Δt and $4\Delta t$ are not the only ones that can be used, and that whatever the relative durations for the periods, the expected range is determined by the square root of the ratio of the durations. The next paragraph explains that the absolute magnitude of the durations is not important. Thus, returning to the 4:1 example, data during durations of one minute and four minutes are as valid for observations on the order of minutes as data during durations of one day and four days are for observations on the order of days.

The teaching of an expected range in the second duration based on the square root of the ratio of the durations is repeated at least in Paragraphs [0030] and [0033]. In addition, the performance of this computation

by a computer system is described in the paragraph beginning at page 17, line 15.*

For these reasons, applicant respectfully submits that the specification and claims 48, 52 and 56 are in compliance with 35 U.S.C. § 112, first paragraph, and respectfully requests that the objection and rejection based on 35 U.S.C. § 112, first paragraph, be withdrawn.

Applicant's Reply to the Rejection
Under 35 U.S.C. § 112, ¶ 2

Claims 1, 22 and 35 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter that applicant regards as the invention, because the claims allegedly were unclear as to what was being modified by the phrase "based on Brownian motion." This rejection is respectfully traversed.

Applicant has amended claims 1, 22 and 35 in order to more particularly define the invention, and respectfully submit that lack of clarity alleged by the Examiner does not exist in the amended claims.**

For these reasons, applicant respectfully submits that claims 1, 22 and 35 are in compliance with 35 U.S.C. § 112, second paragraph, and respectfully requests that the

* Although that paragraph is identified as Paragraph [0048], applicant notes that two paragraphs on pages 15 and 16 inadvertently were not numbered.

** Applicant does not admit that the claims as originally filed were unclear. Moreover, applicant respectfully submits that the amendments of claims 1, 22 and 35 in this regard are not substantial amendments relating to patentability, nor are they narrowing amendments, under the doctrine of Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 62 USPQ2d 1705 (2002), and related cases.

rejection based on 35 U.S.C. § 112, second paragraph, be withdrawn.

Applicant's Reply to the
Rejection Under 35 U.S.C. § 101

Claims 1-59 were rejected under 35 U.S.C. § 101 as being directed to nonstatutory subject matter. This rejection is respectfully traversed.

Applicant has amended claims 1, 4-6, 8-10, 18, 22, 25-27, 34, 35, 38-40, 47, 48, 52 and 56, and has added new claims 62-73, in order to more particularly define the invention. The claims, as amended, define more than just the comparing of two ranges, as the claims were characterized by the Examiner. Rather, the claims define using such a comparison to determine the state of a system represented by varying data, and more specifically to determine how that system is varying. As explained in the specification, that determination allows prediction of the future course of the system. The system could be at least a financial system or market, a meteorological system or a biological system. Applicant respectfully submits that such a result is at least as "useful, concrete and tangible" as the momentary fixing of a price in State Street Bank & Trust Co. v. Signature Financial Group Inc., 149 F.3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998), cited by the Examiner.

For these reasons, applicant respectfully submits that claims 1-59, as amended, are in compliance with 35 U.S.C. § 101, and respectfully requests that the rejection based on 35 U.S.C. § 101, be withdrawn.

Conclusion

For the reasons set forth above, applicant respectfully submits that this application, as amended, is in condition for allowance. Reconsideration and prompt allowance of this application are respectfully requested.

Respectfully submitted,

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